Energy Policy Update

DECEMBER 9, 2013

The Energy Policy Update electronic newsletter is published by the Arizona Governor's Office of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by community outreach personnel. For inquiries, call 602-771-1143 or toll free to 800-352-5499. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

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The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

Altar Valley Ranchers Believe Gas Pipeline Will Destroy A Way of Life

[Arizona Daily Star, Dec. 6] Sasabe residents in the Altar Valley are nervously watching as construction crews bulldoze land just across the Mexican border. They believe, or more accurately fear, the corridor the size of a football field being carved into the Mexican desert is evidence that approval of a proposed 59-mile Kinder-Morgan pipeline through their area is little more than a formality. With a decision from the Federal Energy Regulatory Commission on the actual route of the pipeline not expected until next year, Altar Valley residents are left to wonder how the 36-inch natural-gas-pipeline extension expected to cut through a path through their ranches and sensitive wildlife corridors will affect their lives. The sound of heavy equipment clearing desert can easily be heard from the historic guest ranch that Richard Schultz runs a few hundred feet from the international border. While walking through a thick grove of mesquite trees between the 90-year-old ranch once frequented by Hollywood stars and Washington, D.C., politicians, Schultz says he can only guess as to where Kinder Morgan wants to put the pipeline in relation to his ranch.

Arizona Science Center Receives Grant to Improve STEM

[Arizona Republic, Dec. 1] Every month, teams from three school districts in Arizona meet to create ways to improve the teaching of science, technology, engineering and math, commonly known as the STEM curriculum. The teams seek a new approach in hopes that their districts can become models for the entire state, and perhaps even the nation. The project is funded through a planning grant of more than $260,000 to the Arizona Science Center from the Helios Education Foundation. The districts are Scottsdale Unified, Flagstaff Unified and J.O. Combs Unified. J.O. Combs, which serves the San Tan Valley area, collaborates with the Pinal County School Office Education Service Agency. The Science Center's president and CEO, Chevy Humphrey, said that when today's sixth-graders graduate, they will enter a market in which 70 percent of jobs are STEM-based or require STEM skills. The goal is to make curriculum changes beginning next academic year.

Arizona's Solar Water-Heating Industry on Edge

[Arizona Republic, Dec. 7] For the veterans of Arizona's small solar water-heating industry, staring down an industry-crippling crisis is nothing new. Dozens of companies

that installed about 130,000 solar water heaters in the state in the early 1980s were wiped out overnight when the government cut federal tax credits in 1985. Few companies withstood that blow, although dozens sprouted in 2005 when federal tax credits for the industry were reinstated. Now another potentially devastating policy change looms as the state's biggest utility has ended its incentives for solar water heating. Arizona Public Service Co. is required to get 15 percent of its energy from renewable sources by 2025, and to accomplish that goal, it has provided rich incentives for rooftop solar electric and other technologies, including water heating. But because APS is ahead of schedule reaching its renewable-energy mandates, it has stopped offering incentives for solar water heating. The money the utility provided to offset the initial cost of the rooftop systems ran out in September, and APS is not seeking to repeat the offering in 2014. Along with federal and state tax credits, the utility incentives created a boom in recent years among the solar water-heating and solar electric, or photovoltaic, installations. The cost to manufacture photovoltaic solar panels has dropped dramatically, allowing that industry to thrive despite eliminating its APS incentives. Solar water heating, though much more affordable than solar electric, has not been able to reduce manufacturing costs as much and remains a difficult sell without incentives. One of the five utility regulators who set APS rates has proposed bringing the incentives back to help encourage homeowners to use solar water heating, and the issue is scheduled to be addressed Dec. 17 by the Arizona Corporation Commission.

ASU Report: City of Phoenix Reduces Greenhouse Gas Emissions by 7.2 Percent

[ASU News, Dec. 3] The City of Phoenix is proving that it's serious about going green, according to a recent greenhouse gas emissions report compiled by Arizona State University. In 2008 the city council adopted a goal to reduce greenhouse gas emissions from city operations to five percent below the 2005 levels by 2015. The city met and exceeded that objective within four years. The latest report was compiled by Arizona State University's Sustainability Solution Services, a program within the Global Institute of Sustainability's Rob and Melani Walton Sustainability Solutions Initiatives, and states that in 2012, the city achieved a 7.2 percent decrease in greenhouse gas emissions by emitting 629,504 metric tons of carbon dioxide and carbon dioxide equivalents. When compared to the 2005 total emission of 678,150 metric tons, Phoenix is not only ahead of schedule in reaching its goal, but has gone 2.2 percent beyond its commitment

Brewer Eyes Electricity Tax Break for Manufacturers

[Arizona Capitol Times, Dec. 3] The next frontier in Arizona's efforts to woo manufacturers may be an exemption on the sales taxes they pay on electricity usage. Gov. Jan Brewer is working on a proposal to eliminate the sales taxes that manufacturers pay on their electricity, according to gubernatorial aide Michael Hunter. Arizona is one of only 13 states that charges its full sales tax rate on energy usage, he said. The 37 other states, including many that Arizona competes with in trying to lure new businesses, either don't tax energy usage at all or have exemptions or lower rates for manufacturers, Hunter said. "There are certain tax problems in our tax code that just jump off of a spreadsheet," Hunter said. "It's just one of those not very interesting, not very exciting areas of the tax code where we're not competitive. And our system is providing a level of sticker shock that we could probably manage better by providing an exemption." The plan provides an early glimpse at what may be in Brewer's 2014 agenda. Hunter said Brewer has pursued some kind of tax agenda every year, and this is a potential feature of that agenda for the upcoming session, expected to be her last as governor.

Fees Mean Eating Cost for 1 Solar Firm, Closure for Another

[Arizona Republic, Nov. 23] The biggest rooftop-solar installation company in the state, SolarCity Corp., will lower its prices for new customers to mitigate the effect of a small fee regulators approved recently, but at least one smaller company has already shut its doors. The Arizona Corporation Commission voted 3-2 Nov. 14 to impose a fee averaging about $5 a month on APS customers who install solar after Dec. 31. The fee was much smaller than Arizona Public Service Co. proposed, but the solar industry didn't

want any increase. In the wake of the decision, Dependable Solar Products of Tempe and Scottsdale closed, and its owners, Lane and Ursula Garrett, will file personal bankruptcy, they said. “There is no way we can stay in business,” Lane Garrett said of his company, which employed 30 people. “Small businesses can no longer compete,” he said. “That is the bottom line.” Business at Dependable Solar Products had been dwindling over the past two years as APS reduced and then eliminated the up-front incentives for residential solar, and the new fee was the final straw, he said. Garrett said he expects 80 percent of the metro Phoenix installation companies will be out of business in the next year, although he said the major installation companies like SolarCity that lease solar panels will continue to grow. Garrett had been a member of the board of the Arizona Solar Center, an industry group that promotes solar commerce, but resigned recently because APS has a representative on the board. Officials with California-based SolarCity said they will change prices starting Jan. 1 so that the company will earn less from each installation in APS territory, allowing customers to save the same amount each month. The company controls about 40 percent of the market in APS and Salt River Project territories.

Local Senator Attends Energy Policy Course

[Sierra Vista Herald, Nov. 28] PHOENIX — Sen. Gail Griffin recently completed a 60 hour university program in energy policy planning. The program is awarded through the University of Idaho and the Pacific Northwest Economic Region’s Energy Horizon Institute, in a partnership with the National Conference of State Legislatures and support from the U.S. Department of Energy. Forty legislators from across the country are selected for this distinguished program. The Institute educates legislators on the North American energy infrastructure and delivery system. The complex issues associated with electricity, natural gas, petroleum infrastructure; regulation governing this infrastructure; nuclear energy and alternative energy, including wind and solar are just some of the areas that legislators must understand to make responsible and informed policy decisions.

MEC Committed to Renewable Energy

Cooperative has completed 26 community solar projects

[Mohave Daily News, Nov. 27] BULLHEAD CITY — Under its Renewable Energy Program, Mohave Electric Cooperative has completed 26 community solar projects in the past four years, with three more under construction and six more planned for 2014. The projects include schools, government buildings, fire stations, and nonprofits, such as the Boys & Girls Clubs. MEC believes the solar panels, installed at no cost to the recipients, benefit taxpaying members by lowering the operating costs of those entities. Solar panels have been installed at 17 schools and three fire stations. MEC’s Renewable Energy Program is mandated by the Arizona Corporation Commission, which regulates electric utilities. MEC and the city of Bullhead City recently announced plans to build a 30 kilowatt array of solar panels that are expected to completely power the Senior Center and Senior Nutrition Center buildings on Trane Road, saving $16,000 annually. Mohave Electric had previously constructed a solar array at Bullhead City Hall. The projects are funded by an ACC-required surcharge on members’ bills. Most residential members pay $3.10 per month, which has generated a total of $1.8 million. The ACC approves the surcharge amount annually. MEC will attempt to receive permission to reduce the surcharge.

NAU Seeks Navajos for Uranium Cleanup Training

[Associated Press, Nov. 25] Northern Arizona University is using federal grant money to address two of the most widespread problems on the Navajo Nation — unemployment and uranium contamination. A $200,000 grant from the U.S. Environmental Protection Agency will allow the school’s Institute for Tribal Environmental Professionals to train up to 40 people over three years to safely handle radioactive materials and to find a job in a place where the unemployment rate hovers around 50 percent. About 4 million tons of uranium ore were mined from the reservation from 1944 to 1986 for wartime weapons, leaving a legacy of death and disease. Families still live among the contamination that

the tribe and federal government are working toward cleaning up. The top priority is the former Northeast Church Rock Mine near Gallup, N.M.

UA Team Discover Process to Turn Waste Sulfur into Plastic

[Arizona Daily Star, Dec. 1] Science requires a lot of hard work and a little bit of luck. Both came into play for a UA professor and his research team. They invented a new chemical process to make plastic out of liquid sulfur for the first time. Jeff Pyun, University of Arizona associate professor of chemistry and biochemistry, began this project in 2010 when the UA gave him funding to explore a new area of batteries. Pyun said he didn't want to work with lithium-ion batteries, which are the most common in portable electronic devices, because it would be hard to distinguish himself in that area. Instead, Pyun turned to lithium-sulfur batteries, which have a lot of potential and one big drawback. Pyun said lithium-sulfur batteries store five times more energy than ion batteries, but they don't last nearly as long. "Typical lithium-ion batteries can go through 500 to 1,000 charge-discharge-charge cycles," he said. "For these lithium-sulfur batteries, you're dead before even 100 cycles." Pyun and his team made it their goal to give lithium-sulfur batteries a much longer lifetime. The team then began studying the chemistry of sulfur. "Sulfur is great for things like batteries and optics, but it's really hard to work with," Pyun said. "No one's developed any chemistry to work with it. It doesn't dissolve in most things, and you can't melt it like a plastic — it's just evil. "We were the first to melt it and do chemistry in this liquid-molten sulfur," Pyun said. "We did that and had a plastic in one step."

Utility Customers to Opt Out?

[Eastern Arizona Courier, Dec. 3] SAFFORD — Opting out of the Safford smart metering program could become a reality — but it's going to cost. The City of Safford has already begun its meter renewal program, which replaces outdated meters with automated meter read technology that utilizes radio frequency waves to transmit data in real time. The proposed opt-out policy would charge $75 for the initial meter and $15 for each additional meter. Furthermore, a monthly charge of $25 for the initial meter and $10 for each additional meter will be assessed. That means for a residence in Safford, which is supplied with electric, natural gas and water meters, the initial opt out charge would be $105, and each monthly charge would be $45 on top of the customer's usual utility bill. At the Nov. 25 Safford City Council meeting, Don Knight, who is serving as the director of the FlexNet meter renewal project for the city, recommended against allowing an opt-out policy, but if the council chose to do so, to implement a charge to those who choose to not have their meters replaced. Utility Director and interim City Manager Eric Buckley recommended an opt out charge because those residences and businesses will still necessitate a meter reader.

ALTERNATIVE ENERGY AND EFFICIENCY

Agriculture Secretary Vilsack Announces Energy Efficiency Loan Program to Lower Costs for Consumers, Reduce Greenhouse Gas Emissions

Rural Development Loan Program is Latest USDA Effort in Support of Climate Action Plan

[USDA Office of Communications, Dec. 4] WASHINGTON – Agriculture Secretary Tom Vilsack today announced that USDA will take new steps to save consumers money on their energy bills in partnership with rural electric cooperatives. USDA plans to provide rural electric cooperatives up to $250 million to lend to business and residential customers for energy efficiency improvements and renewable energy systems.

Obama Administration Expands Better Buildings Challenge to Multifamily Housing, Launches New Programs to Boost U.S. Energy Efficiency

[Energy.gov, Dec. 3] WASHINGTON – Building on $2 billion in financing commitments from the private sector for energy efficiency updates to commercial buildings under the President's Better Buildings Challenge, the U.S. Departments of Energy and Housing and Urban Development today expanded the Challenge to multifamily housing such as apartments and condominiums and launched the Better Buildings Accelerators to

support state- and local government-led efforts to cut energy waste and eliminate market and technical barriers to greater building efficiency. The Obama Administration also announced it will challenge Federal agencies to further expand their use of performance-based contracts through 2016 to upgrade the energy efficiency of Federal buildings at no cost to taxpayers – helping the Federal Government save money and further reduce energy use.

Solar Energy Was the U.S.'s Sole New Power Source in October

[Yahoo Finance, Oct. 26] In October, power plants generating 530 megawatts of electricity came online in the United States. And every single electron put on the grid came from the sun, according to a report released today. It's possible to make too much of the fact that solar energy was the sole source of new electricity capacity in US that month. After all, the completion dates of power plants can be random. That's particularly true for complex, multibillion-dollar, fossil fuel power stations that can take years to build and are subject to oversight by state regulators. However, it is also possible to be too dismissive of this energy shift and the fact that solar supplanted coal and natural gas in October. It's not a huge amount of power – at peak output 530 megawatts is what a medium-sized natural gas-fired power plant would generate. But it's a clear sign that solar is no longer a niche play – especially when you consider that the October's numbers don't include the installation of roof photovoltaic panels on homes and businesses. In California alone, for instance, 19.5 megawatts of rooftop solar was installed in the territories of the state's three big utilities just in October.

SolarCity, Tesla Roll Out Energy Storage Service

[San Francisco Chronicle, Dec. 5] Not content to blanket rooftops with solar panels, SolarCity is jumping into the energy storage market as well. And the company is teaming up with corporate cousin Tesla Motors to do it. SolarCity on Thursday will unveil DemandLogic, a new energy management and storage service for businesses. The service will use a combination of solar panels, big batteries and advanced software to cut utility bills for clients. Those clients will pay for the service on a monthly basis, rather than buying the gear. Tesla will supply the lithium-ion batteries, assembled at the company's Fremont factory. Tesla CEO Elon Musk chairs SolarCity's board of directors. SolarCity's CEO, Lyndon Rive, is Musk's cousin. "We see storage as a very integral and necessary part of solar," said Eric Carlson, SolarCity's senior director of grid integration. The solar leasing company, he said, is also testing a storage service for homes but isn't ready to roll it out. DemandLogic focuses on reducing a specific part of a business's utility bills - demand charges. Businesses not only pay for the amount of electricity they use from the grid, they also pay a charge based on their peak electricity demand during the month, even if that peak is very brief. So DemandLogic uses solar panels and batteries to lower the peak. If a business's electricity demand spikes at one particular part of the day, DemandLogic will draw more electricity from the panels and batteries and less from the grid. The business will still be using the same amount of electricity it would have without SolarCity's system, but less of that power will come from the grid. As a result, the demand charges on the business's monthly utility bill will be lower. DemandLogic can also keep businesses running in case of a blackout.

US Solar Photovoltaic Pipeline Grows to 43 Gigawatts: Enough to Power More Than Six Million Households, According to NPD Solarbuzz

The US will be the third-largest solar PV market in 2014, after China and Japan.

[Solarbuzz.com, Nov. 25] Santa Clara, CA – The pipeline of solar photovoltaic (PV) projects awaiting completion within the United States has grown by 7% during the past 12 months, and now exceeds 43 gigawatts (GW), which is enough to power more than six million US households. Whereas large projects in excess of 100 megawatts (MW) previously dominated the US PV pipeline, growth is now being driven by smaller projects up to 30 MW in size, according to the latest NPD Solarbuzz *United States Deal Tracker* report. The growing project pipeline remains a key factor in driving the positive outlook for the US PV industry, which is now forecast by to become the third-largest solar PV market globally in 2014, after China and Japan.

ENERGY/GENERAL

Five LNG Export Applications Have Been Approved – Natural Gas Prices Are Up 35.6 Percent at a Cost of $25.8 Billion

[Industrial Energy Consumers of America website, Dec. 2] There is no way of really knowing whether the U.S. Department of Energy's (DOE) approval of five applications to export LNG to non-free trade countries is having an impact on natural gas prices. The fact is that according to the Energy Information Administration (EIA), prices of natural gas have increased by 35.6 percent since August of 2012, when the first LNG export terminal was approved. This means that for whatever reason, consumers are paying $25.8 billion more for their natural gas. According to the EIA, the U.S. consumed 25,502,251 million cubic feet (mcf) of gas in 2012, which means for every one cent increase per mcf, consumers pay about $255 million more. Since prices have risen $1.01 since the first LNG export terminal was approved, consumers could pay $25.8 billion more per year for natural gas, plus higher costs of natural gas-fired power generation. Since DOE's approval of LNG export terminals can be for periods up to 30 years, a lot can happen to domestic demand and supply that cannot be foreseen today. It is for this reason the DOE must take a cautious and balanced approach to approving new LNG export terminals and prevent price spikes.

INDUSTRIES AND TECHNOLOGIES

Colored Plastic Doubles Solar Cell Power

[MIT Technology Review, Dec. 3] A thin sheet of dyed plastic could cut the cost of solar power, particularly for applications that require solar cells to be highly efficient and flexible. Researchers at the University of Illinois at Urbana-Champaign are using the plastic to gather sunlight and concentrate it onto a solar cell made of gallium arsenide in an experimental setup. Doing so doubled the power output of the cells. So far, the researchers have shown that the approach works with a single solar cell, but they plan to make larger sheets of plastic dotted with arrays of many tiny solar cells. The approach could either let a smaller solar panel produce more electricity, or make a panel cheaper by reducing the amount of photovoltaic material needed.

Compressed Air Energy Storage Installations to Reach $4.8 Billion in Revenue

[Electric Light & Power, Dec. 6] Driven by growing penetration of intermittent renewable energy, increasingly constrained grid conditions, and the need for investments in electricity infrastructure, compressed air energy storage (CAES) — a technology that has been commercially available for more than 30 years — is enjoying a surge of renewed interest, according to Navigant Research. In Asia Pacific, Europe and North America, new installations of CAES are expected to increase steadily over the next 10 years. Growth in the sector will partly be driven by advances in isothermal, or adiabatic, CAES, which can be sited anywhere and conveniently scaled using modular units, according to Navigant. While no new CAES plants have been deployed since 1991, project activity and interest in the technology has grown in recent years. Higher-efficiency next-generation CAES technology is also nearing commercialization.

Eaton Releases Electric Vehicle 'Hypercharger'

[Electric Light & Power, Dec. 9] Power management company Eaton said its new HyperCharger is capable of fast-charging electric vehicles (EVs) up to 1 MW. Designed to charge large fleets of electric buses, the on-route charger was recently installed in several cities, including Tallahassee, Florida, Worchester, Massachusetts and Stockton, California. The HyperCharger is scalable from 200 KW to one MW. On a recent demonstration route, the HyperCharger recorded an average of eight charges and 240 miles per day utilizing 100 percent on–route charging. The charger is designed to provide fleets of all sizes, including mass transit vehicles, with efficient off-board charging.

Short-Cut to Produce Hydrogen Seen As Step to Cleaner Fuel

[Reuters, Dec. 8] OSLO – Scientists have produced hydrogen by accelerating a natural process found in rocks deep below the Earth's surface, a short-cut that may herald the wider use of what is a clean fuel, a study showed on Sunday. Used in rockets and in battery-like fuel cells, hydrogen is being widely researched as a non-polluting fuel, but its use is so far hampered by high costs. A few hydrogen vehicles are already on the roads, such as the Honda FXC Clarity and Mercedes-Benz F-Cell, and more are planned. Researchers in France said aluminum oxide speeded up a process by which hydrogen is produced naturally when water meets olivine, a common type of rock, under the high temperatures and pressures found at great depths.

US Energy Boom Helps Grease Manufacturing's Spinning Wheels

[CNBC.com, Dec. 8] The U.S. manufacturing renaissance may have an invisible hand guiding it along: the energy sector, which is in the midst of its own breakneck expansion. The heavily chronicled shale boom that has propelled U.S. oil production to historical peaks also may be greasing the wheels of manufacturing, which suffered for years as production moved to cheaper havens overseas. Now, however, the once-beleaguered sector is expanding briskly. Last week the Institute for Supply Management reported that manufacturing activity expanded at its fastest pace in 30 months in November.
While ISM does not break out energy-related manufacturing specifically, Brad Holcomb, chairman of its manufacturing business survey committee, said the rise of shale production has definitely had an impact on manufacturing gains "since energy affects everything."

LEGISLATION AND REGULATION

ASHRAE Develops Data Center Energy Standard

[Energy Manager Today, Nov. 26] ASHRAE is creating a standard that specifically addresses the unique energy requirements of data centers with their high plug loads. Standard 90.4P, Energy Standard for Data Centers and Telecommunications Buildings, is being developed in response to requests to recognize the energy performance profiles unique to data centers. Previously, data centers were included in ANSI/ASHRAE/IES Standard 90.1-2013, Energy Standard for Buildings Except Low-Rise Residential Buildings. Standard 90.4P will feature a performance-based approach that is more flexible and accommodating of changes, which rapidly occur in the data center design, construction and operations, according to chair Ron Jarnagin. Standard 90.4P is open for advisory public review from Nov. 15-Dec. 30, 2013.

EPA and DOE Release Annual Fuel Economy Guide with 2014 Models

[Energy.gov, Dec. 3] WASHINGTON – The U.S. Environmental Protection Agency (EPA) and the Department of Energy (DOE) are releasing the 2014 Fuel Economy Guide, providing consumers with a valuable resource to identify and choose the most fuel efficient and low greenhouse gas emitting vehicles that meet their needs. The 2014 models include efficient and low-emission vehicles in a variety of classes and sizes, ensuring a wide variety of choices available for consumers.

Federal Agencies Must Source 20% of Electric Use from Renewables by 2020

[Energy Manager Today, Dec. 6] By fiscal year 2020, to the extent economically feasible and technically practicable, 20 percent of the total amount of electric energy consumed by each federal agency shall be renewable energy. To better manage building performance, enhance energy efficiency, and reduce energy waste, each agency shall install building energy meters and sub-meters and enter the meter data into the EPA's Energy Star Portfolio Manager. The General Services Administration, in coordination with the Department of Energy and the EPA, shall prepare and initiate a strategy to pilot Green Button at federal facilities where feasible, and the EPA shall update Energy Star Portfolio Manager to facilitate the inclusion of building energy usage data using Green Button. The Obama administration had other energy announcements this week. The administration extended the use of performance-based contracts through 2016 for

agencies to upgrade the energy efficiency of federal buildings. And the DOE and Housing and Urban Development (HUD) expanded the Better Buildings Challenge to multifamily housing and announced 50 multifamily partners – representing roughly 200,000 units and over 190 million square feet – have committed to cutting their energy use by 20 percent in ten years.

FERC Order 792 Opening Door to More Grid-Tied Renewables

[Fierce Energy, Dec. 2] The Federal Energy Regulatory Commission (FERC) has passed Order 792, Small Generator Interconnection Agreements and Procedures, amending Order 2006, which established terms and conditions for public utilities to provide just and reasonable interconnection service for small generators. This revision specifically adds energy storage to the category of resources eligible to interconnect to the power grid under the Small Generator Interconnection Procedures (SGIP) and/or Fast Track Process. In addition, it clarifies how to measure the size of a storage device for determining SGIP and Fast Track eligibility. The Order will open the door for connecting more renewable resources to the power grid.

Large Companies Prepared to Pay Price on Carbon

[New York Times, Dec. 5] WASHINGTON — More than two dozen of the nation's biggest corporations, including the five major oil companies, are planning their future growth on the expectation that the government will force them to pay a price for carbon pollution as a way to control global warming. The development is a striking departure from conservative orthodoxy and a reflection of growing divisions between the Republican Party and its business supporters. A new report by the environmental data company CDP has found that at least 29 companies, some with close ties to Republicans, including ExxonMobil, Walmart and American Electric Power, are incorporating a price on carbon into their long-term financial plans. Both supporters and opponents of action to fight global warming say the development is significant because businesses that chart a financial course to make money in a carbon-constrained future could be more inclined to support policies that address climate change.

NEI: Remove Burdens to U.S. Nuclear Competitiveness

[Fierce Energy, Dec. 2] The Nuclear Energy Institute (NEI) has filed comments with the U.S. Department of Energy (DOE) regarding its proposed rule governing nuclear energy technology exports. Although the rule includes significant improvements over its 2011 proposal, it would still raise unnecessary impediments for U.S. companies participating in the highly competitive global market for commercial reactor technology, services and technical assistance, according to NEI. These barriers, together with process flaws not addressed in the proposed rule, would continue to place U.S. firms at a severe disadvantage in fast-growing markets such as China and India, where a majority of new nuclear energy facilities will be built.

Renewable Energy Projects Can Now Get 30-Year Permit to Kill Eagles

[Los Angeles Times, Dec. 6] Solar and wind farms scored a victory Friday when the Interior Department announced an extension of permits which allow renewable energy projects to accidentally kill or injure bald eagles without penalty. Renewable energy companies will now be able to obtain permits good for up to 30 years, a sharp jump from the previous five-year maximum. In a statement, Interior Secretary Sally Jewell said the permitting change will "help the renewable energy industry and others develop projects that can operate in a longer term, while ensuring bald and golden eagles continue to thrive."

Renewable Fuel Backers Try to Change EPA's Mind at Hearing

[Reuters, Dec. 5] Supporters of the renewable fuels industry turned out en masse on Thursday, desperate for the U.S. government to change course after last month announcing a plan to lower the amount of biofuels that must be added to the fuel supply in 2014. About 300 people attended a public meeting held by the Environmental Protection Agency on the Renewable Fuel Standard, proposed changes which have

become one of the most divisive policy issues of the year. The number of stakeholders who signed up to testify - almost 150 - was 10 times or more the count at a similar meeting a year ago, an EPA official said. Robert Dinneen, president of the Renewable Fuels Association, estimated that more than 100 of the speakers scheduled to testify were in favor of preserving the renewable fuel standard.

Strong New Energy Efficiency Rules for Electric Motors

[Energy Manager Today, Nov. 27] The US Department of Energy (DOE) proposed new and amended energy conservation standards for certain commercial and industrial electric motors, including a number of different groups of electric motors that DOE has not previously regulated. For those groups of electric motors currently regulated, the proposed standards would maintain the current energy conservation standards for some electric motor types and amend the energy conservation standards for other electric motor types. According to an ACEEE blog posting, “Some of the motors that will see improved efficiency with these standards include gear motors used in equipment like escalators and conveyors, and vertical pump motors used in irrigation and many municipal water and wastewater systems. The proposed standards cover 1 to 500 horsepower motors.” According to the Energy Information Administration, about one-half of all electricity used by US industry goes to power motors. DOE’s analyses indicate that the proposed standards would save a significant amount of energy. Estimated lifetime savings for electric motors purchased over the 30-year period that begins in the year of compliance with new and amended standards (2015–2044) would amount to 7.0 quads (full-fuel-cycle energy). This is equivalent to 30 percent of total US industrial primary energy consumption in 2011.

WESTERN POWER

CSP Hits Milestones, Crossroads in Desert Southwest

[Energy Prospects West, Nov. 26] Five massive concentrating solar power (CSP) projects in Arizona, California and Nevada are on pace to add a combined 1.25 GW of generating capacity to the Western electric grid in 2013 and 2014. But CSP's renaissance in the Desert Southwest could be short lived, as intensified environmental, cost and financial challenges point toward a possible new Dark Age. This prospect already is clearly reflected in CSP's diminishing near-term project pipeline in the region, where developers have been forced to abandon several gigawatts worth of proposals in recent years, in part because utilities have favored photovoltaics over CSP based on PV's price advantage. In fact, following the fleet of federally financed solar thermal installations now in the final stages of construction, very few projects are in the near-term pipeline and no additional commercial CSP projects in the U.S. have broken ground or been financed. It will be 2016 at the earliest before the next big parabolic trough system or power tower comes on line in the Desert Southwest. And it may take even longer, since projects with land-use permits or power purchase agreements already in hand still lack financing, and projects in the later stages of permitting appear to be under increasing environmental scrutiny.

New Mexico Changes RPS Rules, Leads to Confusion

[Energy Prospects West, Nov. 26] Revisions to New Mexico's renewable-energy rule, including the use of renewable-energy credit multipliers and an alternate calculation for the reasonable cost threshold, have produced confusion in the state's energy industry. On Nov. 20, the New Mexico Public Regulation Commission approved an amendment from Commissioner Patrick Lyons that assigns one REC for each kilowatt-hour of wind power, but gives solar power two RECs for each kilowatt-hour. Renewables such as landfill gas, biomass and geothermal, which are included in the "other" renewables category, qualify for three RECs per kWh. According to the Sierra Club and the Coalition for Clean Affordable Energy, the move effectively lowers the state's renewables portfolio standard from 20-percent RPS for 2020 to at least 17.4 percent.. The 10-percent RPS for 2014 will fall to 8.7 percent. The reductions in the RPS could be larger if a utility fulfills New Mexico's diversity RPS rules, which require 30 percent from wind, 20 percent from

solar, and 5 percent from other renewables. New Mexico's RPS uses RECs, rather than actual kilowatt-hours, to calculate whether an electric utility meets the minimum renewables standard, said Chuck Noble, attorney for the Coalition for Clean Affordable Energy. As a result, utilities could meet the RPS with fewer kilowatt-hours of renewables if they procure less wind and more solar and other renewables, such as geothermal, Noble said.

Xcel Seeking Cost Recovery Charge for TX-NM Transmission Network

[Fierce Energy, Nov. 27] In order to recover the costs of new and updated high-voltage transmission lines built for improved reliability and capacity, Xcel Energy is seeking to add a charge to Texas retail customers' bills. In the last year, Xcel has invested more than $173 million in new and upgraded transmission lines and substations within the Texas and New Mexico transmission network. Through a line-item charge known as the transmission cost recovery factor, Xcel Energy is seeking an additional $13 million in annual revenues to cover costs associated with the $173 million, as well as other transmission investments within the Southwest Power Pool that benefit this region. The proposed cost represents a monthly increase of $1.51 for residential customers using 1,000 kilowatt-hours, or a 1.5 percent increase.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

- Angel Investment Tax Credit Program - The main objective of the Angel Investment program is to expand early stage investments in targeted Arizona small businesses. The program accomplishes this goal by providing tax credits to investors who make capital investment in small businesses certified by the Arizona Commerce Authority (ACA). To view the list of businesses that have been certified under this program please click here. LEARN MORE

- Arizona Innovation Accelerator Fund - The Arizona Innovation Accelerator Fund Program is an $18.2 million loan participation program funded through the U.S. Department of Treasury's SSBCI and managed by the Arizona Commerce Authority. The goal of this program is to stimulate financing to small businesses and manufacturers, in collaboration with private finance partners, to foster business expansion and job creation in Arizona. LEARN MORE

- Arizona Innovation Challenge - The Arizona Innovation Challenge is an investment in the minds of talented entrepreneurs in Arizona and around the world. The ACA will award $1.5 million to the most promising technology ventures that participate in the Challenge (awards may range from $100,000 to $250,000). LEARN MORE

- AZ Fast Grant - Enables Arizona-based technology companies to initiate the commercialization process. Total funds available for this grant round are $175,000. Maximum awards of $5,000 and $20,000 will enable companies to accomplish one of four scopes of work. LEARN MORE

- AZ Step Grant - Grant funding from the U.S. Small Business Administration (SBA) with matching funds contributed by the Arizona Commerce Authority (ACA) offering a number of services and tools to Arizona small businesses as they go global for the first time with sales or enter new, international markets. LEARN MORE

- Commercial/Industrial Solar Energy Tax Credit Program - The primary goal of the Commercial/Industrial Solar Energy Tax Credit Program is to stimulate the production and use of solar energy in commercial and industrial applications by subsidizing the initial cost of solar energy devices. The program achieves this goal by providing an Arizona income tax credit for the installation of solar energy devices in Arizona business facilities. LEARN MORE

- Healthy Forest - The primary goal of the Healthy Forest Enterprise Incentives Program is to promote forest health in Arizona. The program achieves this by proving incentives for certified businesses that are primarily engaged in harvesting, processing or transporting of qualifying forest products. LEARN MORE

- Job Training Program offers job-specific reimbursable grants for employers creating new jobs or increasing the skill and wage level of their current employees. Deadline: Year Round. LEARN MORE

- Renewable Energy Tax Incentive Program offers a refundable income tax credit and property tax reduction to companies in solar, wind, geothermal and other renewable energy industries who are expanding or locating a manufacturing or headquarters operation in Arizona. The tax credit is up to 10% of the total qualified investment amount and the property tax benefit can reduce a company's property taxes by up to 75%. Deadline: Year Round. LEARN MORE

- Research and Development Tax Credit is an Arizona income tax credit for increased research and development activities conducted in this state. Starting in 2010, a qualifying company may be eligible to claim a partial refund of its current year excess R&D credit. Applicants may apply at the end of their tax year but prior to filing a tax return with Revenue. LEARN MORE

Quality Jobs Tax Credit Program - The primary goal of the Quality Jobs Tax Credit program is to encourage business investment and the creation of high-quality employment opportunities in the state. The program accomplishes this goal by providing tax credits to employers creating a minimum number of net new quality jobs and making a minimum capital investment in Arizona. LEARN MORE

- **Bonds Administered by the Arizona Commerce Authority**
  - Private Activity Bonds (PAB) - Tax exempt bond financing, for federal purposes, offers an alternative financing mechanism for certain projects. LEARN MORE
  - Qualified Energy Conservation Bonds (QECB) - Tax credit bonds are available as an alternative financing mechanism for certain green projects. LEARN MORE

- **Federal Programs**
  - Small Business Innovation Research (SBIR) Program - SBIR is a competitive program that encourages small businesses to explore their technological potential, as well as, providing incentive to profit from its commercialization. LEARN MORE
  - Small Business Technology Transfer (STTR) Program - STTR is an important small business program that expands funding opportunities to meet the nation's scientific and technological challenges in the 21st century. LEARN MORE
  - Work Opportunity - The Work Opportunity Tax Credit (WOTC) is a federal tax credit of up to $9,000 that Congress provides to private-sector businesses for hiring individuals from nine target groups who have consistently faced significant barriers to employment. LEARN MORE

- Pollution Control Tax Credit - Provides a 10 percent income tax credit on the purchase price of real or personal property used to control or prevent pollution.

- Renewable Energy Production Tax Credit - An income tax credit awarded to utility-scale generation systems based on the amount of electricity produced annually for a 10-year period using solar or wind energy. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

- Sales Tax Exemption for Machinery and Equipment
  Exemptions are available for:

  1. Machinery or equipment used directly in manufacturing, see ARS 42-5159(B)(1).
  2. Machinery, equipment or transmission lines used directly in producing or transmitting electrical power, but not including distribution, see ARS 42-5159(B)(4).
  3. Machinery or equipment used in research and development, see ARS 42-5159(B) (14).

Questions can be directed to Christie Comanita (602-716-6791).

- Solar Liquid Fuel Tax Credit - Income tax credits are available for research and development, production and delivery system costs associated with solar liquid fuel. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

- Database of State Incentives for Renewables and Efficiency (DSIRE)
  - Arizona Incentives/Policies
  - Federal Incentives/Policies
  - Solar Policy News - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- SBIR/STTR FY 2014 Phase II Release 1, Reference Number: DE-FOA-0001019 – Response Due Date: December 10, 2013 11:59:00 AM ES
- U.S. Dept. of Energy Solar Decathlon 2015, Funding Number: DE-FOA-0000959, Response Due Date, December 20, 2013
- Solid Waste Management Grant - Response due December 31, 2013
- Energy Frontier Research Centers – Response due by January 9, 2014
- Research and Development for Hydrogen Storage – Response due January 17, 2014
- Hydrogen Delivery Technologies – Response due by February 14, 2014
- Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) – Response due by February 18, 2014
- Environmental Sustainability - Response due February 20, 2014
- Energy for Sustainability - Response due February 20, 2014
- Environmental Health and Safety of Nanotechnology - Response due February 20, 2014
- Particulate and Multiphase Processes- Response due February 20, 2014

- Thermal Transport Processes - Response due February 20, 2014
- Plant Feedstock Genomics for Bioenergy: A Joint - Response Due Date: February 25, 2014
- SunShot "Race to the Roof" Initiative - Registration due October 31,2014
- Repowering Assistance Program – Ongoing
- Rural Business Enterprise Grants– Ongoing
- Rural Business Opportunity Grants– Ongoing
- Sustainable Agriculture Research and Education Grants – Ongoing
- Renewable Energy RFPs - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines

ENERGY-RELATED EVENTS

2013

- Ecobuild America 2013
  December 9-13 Washington, D.C.
- ASU Sustainability Series Events
- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ

2014

- Energy, Utility & Environment Conference
  February 3-5, 2014 Phoenix, AZ
- 2014 Energy Outlook Conference
  February 4-7, 2014 Washington, DC
- Sustainability Solutions Festival
  February 17-22, 2014 Phoenix, AZ
- Arizona Solar Summit IV
  February 20, 2014 Phoenix, AZ
- Green Biz Forum 2014
  February 18-20, 2014 Phoenix, AZ
- International Geothermal Energy Forum
  April 23-24, 2014 Washington, DC
- National Geothermal Summit
  August 5-6, 2014 Reno, NV
- Geothermal Energy Expo
  September 28-October 1, 2014 Portland, OR
- ASU Sustainability Series Events
- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ